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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/009,444	05/09/2002	Karsten Meyer-Grafe	(H) 01PH0389USP	1549

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EXAMINER
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CONTINO, PAUL F

ART UNIT	PAPER NUMBER
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2114

DATE MAILED: 03/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/009,444

Applicant(s)

MEYER-GRAFE ET AL.

Examiner

Paul Contino

Art Unit

2114

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,4,6-19 and 21-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,2,4,6-12 and 14-18 is/are allowed.
- 6) ☒ Claim(s) 13,19 and 21-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Objections*

1. Claim 22 is objected to because of the following informalities: line 3 states “a bus unit” where “one of the bus units” would be a clearer indicator that it is one of the “two bus units”. Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 13, 19, and 21-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 13 recites the limitation “and thus a higher process speed is achieved in the overall combined invention” in lines 1-2. This language is indefinite, as there is no proof that the claimed invention achieves a higher speed through use of independent logic operations. Further, the limitation is not patentable as it is not a machine, manufacture, composition of matter, or a process, nor a tangible result. Appropriate correction is required.

Claim 19 recites the limitation "The system" in line 1 where “A system” is appropriate. There is insufficient antecedent basis for this limitation in the claim.

Claim 19 recites the limitation "the control process" in lines 4-5. The Examiner recommends amending Claim 19 in line 3 to read "... control unit **for a control process** and examines ..." for clarity in further identifying the invention. There is insufficient antecedent basis for this limitation in the claim.

Claim 21 recites the limitation "the output unit" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 22 recites the limitation "the control process" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim 22 recites the limitation "the output data" in line 7. There are two types of output data present, one from one of the bus units, and the other from a peripheral monitoring unit. There is insufficient antecedent basis for this limitation in the claim.

Claim 24 is rejected based upon its dependency to claim 22.

Claim 23 recites the limitation "as claimed in claim 20" in line 1. Claim 20 has been cancelled. Claim 23 is interpreted as being dependent upon claim 19 in order to apply prior art. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 19, 21, and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Wolff et al. (U.S. Patent No. 4,486,826).

As in claim 19, Wolff et al. discloses [a] system for protected data transmission, particularly in ring-shaped bus systems, in which a peripheral monitoring unit (*Figures 1 and 4 #12d*) checks the data sent out by a control unit (*Figures 1 and 4 #12a/b*) [for a control process] and examines them for faults and in the case of a fault suppresses or deletes release data for a peripheral safety-related unit (*Figures 1 and 4 #12*) so that a fault cannot reach the control process, particularly not data transmission sequences, whereby temporarily stored data (*Figure 4 #12f; column 24 lines 48-54, where it is inherent that data is stored temporarily in order to check for a fault*) of the peripheral safety-related unit are read via a bus unit (*Figures 1 and 4 #12f*) of the peripheral safety-related unit and are monitored and detected by a checking logic (*Figures 1 and 4 #12d and 86*) of the peripheral safety-related unit, and whereby the peripheral safety-related unit has redundant input channels (*Figure 4 #s 68, 70, 72, 74, 76, and 78*) and thus redundantly monitors the connected control process and can detect a fault (*column 10 lines 39-45 and 57-59, column 11 lines 27-44, and column 24 line 27 through column 25 line 54*).

As in claim 21, Wolff et al. discloses a safe state of data transmission, particularly of [an] output unit, is initiated by the checking logic (*column 24 lines 48-54, where taking the unit offline allows for a safe state of data transmission by the backup system 14 [Figure 1]*).

As in claim 23, Wolff et al. discloses the checking logic releases or deletes the temporarily stored data (*column 24 lines 48-54, where it is interpreted that if no fault is found, that the temporarily stored data will be sent out as normal*).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Eastvold et al. (U.S. Patent No. 5,745,268) in view of Dawson (U.S. Patent No. 5,390,188).

As in claim 22, Eastvold et al. discloses a peripheral safety-related unit in a system for protected data transmission in ring-shaped bus systems comprising

a buffer in which the output data are stored before their release (*column 14 lines 17-19, where it is implied data packet 120 is being stored before being sent*),

an output logic via which the temporarily stored data are output (*Fig. 6 PAL 20RA10*),

a checking logic which decides whether the data stored in the buffer are output via the output logic (*column 13 lines 48-53*), and

output data of a peripheral monitoring unit for read-back (*Fig. 1 #34; column 5 lines 20-30; column 9 lines 11-14*).

However, Eastvold et al. fails to teach of redundant input channels. Dawson teaches of two bus units (*Fig. 10 #340 and 350*), to forward the output data of a bus unit (*#340 which acts as a buffer*) also to the input section of the other bus unit (*#350*) in order to be able to fetch information from the control process via redundant input channels (*Fig. 10 #310*).

It would have been obvious to a person skilled in the art at the time the invention was made to have included redundant input channels for fault detection as disclosed by Dawson in the invention of Eastvold et al. This would have been obvious because including a reference (*column 21 line 60*) for comparison with incoming data enhances fault detection.

\* \* \*

5. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Eastvold et al. in view of Dawson, further in view of Cawley.

As in claim 24, the combined invention of Eastvold et al. and Dawson teaches of checking logic (*present in DTU 12*) and a peripheral monitoring unit (*master DTU 34*). However, the combined invention of Eastvold et al. and Dawson fails to teach the checking logic receives information from the peripheral monitoring unit in order to prevent a faulty output. Cawley teaches of receiving information to prevent faulty output (*column 8 lines 44-49 and*

*column 9 lines 18-21, where the appending of a check value or CRC is interpreted as an “information item” and the “prevention” is accomplished by the discarding of packets).*

It would have been obvious to a person skilled in the art at the time the invention was made to have included information as disclosed by Cawley in order to prevent faulty output in the system of the combined invention of Eastvold et al. and Dawson. This would have been obvious because the manipulation method of Cawley allows for fast processing of data in a fault management environment (*column 9 lines 21-22*).

***Allowable Subject Matter***

6. Claims 1, 2, 4, 6-12, and 14-18 are allowed.

7. The following is a statement of reasons for the indication of allowable subject matter:

Claim 1 includes the limitations **where the input data of the peripheral safety-related unit and its temporarily stored data are read back via a second transfer unit, whereby the peripheral safety-related unit reads back the temporarily stored data via a bus unit, whereby the peripheral safety-related unit comprises a further bus unit so that the peripheral safety-related unit has redundant input channels and this redundantly monitors the connected control process and can detect a fault**, that, when read within the remainder of the limitations of the claim, makes claim 1 allowable over the prior art. Claims 2, 4, 6-12, and 14-18 are allowable based upon their dependency to claim 1.



*Conclusion*

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: U.S. Patent No. 6,466,539 Kramer et al. discloses status messages sent over a redundant buses.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Contino whose telephone number is (571) 272-3657. The examiner can normally be reached on Monday-Friday 9:00 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Scott Baderman can be reached on (571) 272-3644. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PFC  
3/6/2006

  
**SCOTT BADERMAN**  
SUPERVISORY PATENT EXAMINER